Field application methods

Foam Sealant (SPF and FS)

- Kits and cans (FS) – portable and low tech
- Higher cost than bulk foam
- Cost effective in small areas that are difficult to access with high-pressure hoses.

FS - Foam sealants

FS - Foam sealant

a. Open crack/penetration sealing
b. Limited cavity fill

U5

Foam Sealant (FS)

Field application methods

Spray-applied (SPF)

- Requires open cavities.
- Requires OSHA-approved supplied air equipment and isolation of the work area. Depressurization can be used to protect occupied spaces.
- Allows application of desired R-value thickness.
- Allows visual inspection and infrared, R-value, and air leakage testing before the installation of interior finishes.

SPF – Bulk foam

Gutt rehabs – Walls – inside

SPF – Bulk foam

Closed-cell in a double 2x4 Wall - R-21 with no trimming

Closed-cell foam is a rigid product designed for interior and exterior applications. It expands at a ratio of ~30:1.

Half-Pound Density Foams

It is an expanding soft foam product designed for interior applications. It insulates and air-seals at the same time. Expanding at a ratio of 100:1, it fills every crevice, virtually eliminating air leakage, convection, and airborne moisture movement.

SPF – Bulk foam

Open-cell SPF

Trimming is required

SPF – Bulk foam

Gutt rehabs – Walls – outside

New construction – outside

SPF – Bulk foam

Exterior cavity-wall installation = air barrier continuity

O'Connor Residence – St. Simons Island, GA

SPF – Bulk foam

Attics – Open slopes – from inside

Vented and unvented

SPF – Bulk foam

b. Attics – Open slopes - inside

SPF – Bulk foam

SPF for air sealing in attics before installing fiber insulation

SPF – Bulk foam

b. Basement/Crawl - inside

Crawl space – before and after mitigation work

SPF – Bulk foam

Advantages

Below grade application

SPF – Bulk foam

Slab Insulation

Exterior wall and roof retrofits

Not prone to weather damage

Exterior wall and roof installations

Exterior wall and roof retrofits

Inject closed roof slopes

Spray open roof slopes

SPF – Bulk foam

Exterior wall and roof retrofits

Continuous insulation – minimal thermal bridging

SPF – Bulk foam

SPF provides continuity even on complex substrates

SPF – Bulk foam

Exterior cavity-wall installation

SPF – Bulk foam

Exterior cavity-wall installation = air barrier continuity

SPF – Bulk foam

SPF – Bulk foam

Drainage plane

Field application methods

Injected (cavity fill) on site

- Allows insulation, vapor control, and air sealing in closed building cavities.
- Requires ventilation of the work area. Depressurization can be used to protect adjoining occupied spaces.
- Requires filling closed cavities - R-value can be varied only by foam selection to match cavity thickness (if vapor issues allow).
- Requires care to avoid distorting the sheathing.
- Requires infrared R-value and air leakage quality assurance (voids).

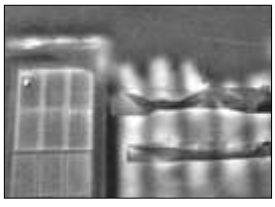
IPF – Bulk foam

Injected on site

IPF – Bulk foam

How do you know you got it all?

IR quality assurance testing during construction



Cavity-fill applications

IPF – Bulk foam

1. Single-family (owner-occupied or rental units)
2. Multi-family (owner-occupied or rental units)
   - Apartments
   - Condominiums




Slots and holes outside

1

Cavity-fill – Wood framed


Franklin Square (1988) - Low-cost housing

Slots and holes outside

1

Wood-framed cavity-fill application – Energy upgrade from R=11 batts to closed-cell urethane (R=24)

Carrus Residence (2007)

Lath & Plaster Thermal Barrier



IPF – Bulk foam

Sequenced finishes and foaming

Ice Dam Remediation – IPF in vent spaces




Portable equipment IPF

Using kit foam to seal small bays

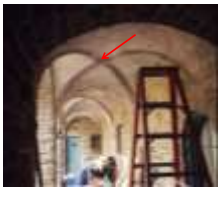
Forms – outside

Etnier Residence – Installation (1992

IPF – Bulk foam

Cavity fill – Masonry/Plaster
Conditioned space above covered outside walkway

Limitations: access – 1 holes possible only at apex of each vault

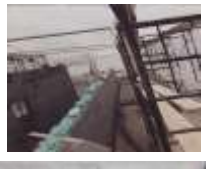


Brady Residence (1995)

IPF – Bulk foam

What ifs:

a. A location has batts in the cavity
b. Historic finishes
c. Lath is good, but plaster is not



Integra Wall System

IPF – Bulk foam

Special conditions

- Soffits

IPF – Bulk foam

Special conditions

- Structural tubes

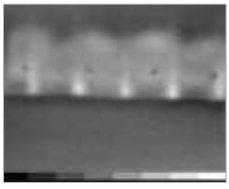



IPF – Bulk foam


Infrared QA of foamed-in-place insulation – effective year-round (240F)

IPF – Bulk foam





Infrared QA of foamed-in-place insulation behind 1" plaster – effective year-round (240F)